

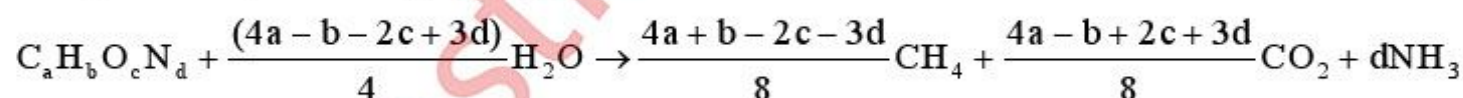
- N.B.: (1) Question number one is compulsory.
(2) Attempt any three questions out of remaining five questions.
(3) Assume suitable data if required.
(4) Draw neat sketches wherever necessary

1. (a) Write a note on material recovery facility. 5
(b) Explain proximate and ultimate analysis 5
(c) Explain factors affecting generation rate of solid waste 5
(d) Estimate the energy content of solid waste having following composition using modified Dulong's formula 5

Component	% by mass
C	38
H	9.5
O	41.5
N	6
S	2
Ash	3

- (e) Write a note on E-waste. 5
2. (a) Write a short note on Refused Derived Fuel. 5
(b) Write in brief about Bio-medical waste management 5
(c) Determine the amount of methane gas generated from anaerobic digestion of 1 tonne of waste 10

having the composition $C_{55}H_{110}O_{35}N_2$



3. (a) Discuss the effects of solid waste on (i) Ground Water (ii) Land (iii) Surface source of water (iv) air 10
(b) Explain in brief various equipments used for separation of solid waste 10
4. (a) What is composting? Explain various types of composting with advantages and disadvantages of each. 10
(b) Explain with neat sketch working of municipal Incinerator. 10
5. (a) Explain hauled and stationary container systems with neat sketches. 10
(b) What is leachate? How it is formed? State the characteristics of leachate. Explain any one method of collection system of landfill gases. 10
6. Write short note on (any four) 20
(i) Vermicomposting (ii) Pyrolysis (iii) Industrial solid waste management (iv) SWM in rural sector
(v) Compare Hauled container system and stationary container system.